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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,613	07/31/2001	Michael Bischof	4191/PCT	4612

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EXAMINER	
EASTHOM, KARL D	

ART UNIT	PAPER NUMBER
2832	

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/890,613	Applicant(s) Bischof et al.
	Examiner Karl Easthom	Art Unit 2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *May 13, 2003*.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *17-31* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *17-31* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☒ The proposed drawing correction filed on *Nov 25, 2002* is: a) ☒ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 17-24 and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Murase et al. '947. Murase discloses the claimed invention at Figs. 3B and 5-6 with the heater patterns 6a and 6b, electrical conductors 8 opposite the tip on the conductor carrier section of substrate 62 or 34, gas sensor function layer 22-32 at Fig. 5, or 40-60 at Fig. 6. The heater sections have different resistance values clearly different and depending on distance from the tip. For example, the meander section is longer than a straight section at Fig. 3b, or the long curved section adjacent the tip is different than the long straight portion. In claim 18, the meander section of 6a is longer than one straight tiny section of 6a towards the tip. In fact, one can arbitrarily pick any section to be a resister heater section, with the claim so written, because resistance is a function of length, so a length can be picked, with each length diminishing. For example, one length may be picked as having two portions 10, or three, or one, etc. Moreover, flaws in the manufacturing and printing process insure that any length has a different resistance than a length next thereto, due to differences in thickness or resistance material, for example, see

col. 1, lines 35-45. In claim 19, the meander section heights vary at Fig. 3b. In fact some have zero meander height - diminishing for claim 20. In claim 21, the path width at Fig. 3c has three sections 6a, 6b, 6c at one part, and two at another 6a, 6b, making the total width variable. In claim 22, it increases at the tip end from 2 to 3 to 6. The above meets claims 23-24. In claim 28, the sensor function layer 54 has a length L less than the carrier section length and the heater is 6 is arranged as claimed. In claim 29, there are several meandering sections in Fig. 3b as noted meeting the claim with conductors 10 for example. In claim 30 the amplitudes diminishes to zero in meander from the meander part of 6a, 6b to the straight part. See also Fig. 4 as a prior art heater meeting the amplitude meander claims. In claim 31, the gas section function layers are on opposite sides of 62 from the heater 6a, 6b.

3. Claims 17-19, 21-24 and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Kojima et al. '591. Kojima discloses the claimed invention at Figs.3, 6, 8A, 10 with the heater patterns 25, 43, for example, electrical conductors 44 opposite the tip on the conductor carrier section of substrate 41, gas sensor function layer 34, see Fig. 6. The heater sections have different resistance values clearly different and depending on distance from the tip. For example, the meander section at Fig. 10B varies as does the thickness W1,W2, W3 to create different resistances depending on the distance from the tip length, meeting claims 23. In claim 18, 21-24 the thicker portions of 25a ensure diminished resistance sections at the tip by increasing the path width. The length of the straight portion is longer than the curved portion. For claim 28, see the length of the function layer 16 at Fig. 2. In claims 29-30, the sections 43b1 and 43a

meet the claim, where the smallest section C is next to the carrier section 44, and 43B1 is largest next to the tip end. In claim 31, the substrate is 15.

4. Claims 17-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Boher et al. Boher discloses the device at Fig. 1 with heating layer 92, having partial resistance smaller in resistance at the tip end where 26 is since it is fatter than the other portion of the heater. Or, for claims 18-20 the other sensor 22 is a heater with the heater 24 a gas sensor function layer with diminishing meander toward a tip. All resistors produce heat by definition. The supply line part is 90/92. The gas sensor functions as a sensor due to detecting the presence of gas.

5. Claims 17 and 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Gruner et al. Gruner discloses the device at Fig. 2 with heating layer 5, and gas sensor function layers comprising 4 and the other resistor 5. All resistors heat. Or, the heating layers 5 meet the claim since the two heaters cannot possibly be the same in meandering length, for reasons noted above, manufacturing tolerances, as evidenced by the disclosure noted above at col. 1 of Murase. The function layers 4 also sense the flow of gas, or presence thereof by lack of flow. The partial resistance 5 smaller in resistance at the tip than that of partial resistance 4. The contact point of claims 25-26 is 6 between 4 and 5, along the length or end of 4 and below same where the top is the tip end. In claim 27, the contact area has an infinite number of contact points, or there are two conductor paths 6 of said at least one heater 5 where "for selecting a different resistance value" can be used to be different heater values.

6. Applicant's arguments filed 5/13/03 have been fully considered but they are moot or are not persuasive. Applicant argues that the references do not disclose sensor function layers since

only gas flow is disclosed. This is not correct since gas flow is a sensing function of the gas. Moreover, one can detect presence by lack of flow. As to a sensor, such as that of Boher, not being a heater, this is not correct. All resistors heat by definition. Moreover, the sensors use the property of heat dissipation to sense. That the heater 26 of Boher is not a meander is not understood since it clearly does so. Finally, note that the cited art is cumulative and reads on at least claim 17. For example, see Fig. 4 of Kitihara, showing the varying amplitudes of the heater 11, depending on location from the tip. As noted above, one period of a sine wave is a resistive section, for example, or less than one period, etc. Each sine wave varies in period and amplitude in Kitihara. See also Hagan et al. At the sole fig. The heaters 14 clearly have varying amplitudes and length sections. There is also a temperature sensor 17. Applicant must define the claims more to overcome such art.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703)308-3306. The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad, can be reached on (703)308-7619. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7722. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

KARL D. EASTHOM
PRIMARY EXAMINER